

What is claimed is:

1. (Amended) A semiconductor device with a bipolar transistor comprising:

a first conductivity type semiconductor layer serving as a collector region;

a base region constituted of a second conductivity type region provided in said first conductivity type semiconductor layer;

an emitter region constituted of a first conductivity region provided in said base region; and

a base contact section provided oppositely from said emitter region in said base region, electrically connected to a base electrode,

wherein said base contact section is constructed of a repeating structure in a plan view, in which a high impurity concentration region of the second conductivity type and a region of the first conductivity type are arranged in an alternate manner, and

wherein said emitter region comprises a plurality of stripe regions and each of said stripe regions is formed so that said base region is exposed at the central portion of each of said stripe regions to be segmented into a plurality along a direction of the stripe, and an emitter electrode is formed so as to be connected to said stripe regions and to cover exposed portions of said base region via an insulating film on said stripe regions and said exposed portions of said base region.

09926425-103001

2. (Amended) A semiconductor device with a bipolar transistor comprising:

a first conductivity type semiconductor layer serving as a collector region;

a base region constituted of a second conductivity type region provided in said first conductivity type semiconductor layer;

an emitter region constituted of a first conductivity region provided in said base region; and

a base contact section provided oppositely from said emitter region in said base region, electrically connected to a base electrode,

wherein said base contact section is constructed of a repeating structure in a plan view, in which a high impurity concentration region of the second conductivity type and a region of the second conductivity type constituting said base region are arranged in an alternate manner, and

wherein said emitter region comprises a plurality of stripe regions and each of said stripe regions is formed so that said base region is exposed at the central portion of each of said stripe regions to be segmented into a plurality along a direction of the stripe, and an emitter electrode is formed so as to be connected to said stripe regions, and to cover exposed portions of said base region via an insulating film on said stripe regions and said exposed portions of said base region.

09926425 103001

3. (Amended) A semiconductor device with a bipolar transistor comprising:

a first conductivity type semiconductor layer serving as a collector region;

a base region constituted of a second conductivity type region provided in said first conductivity type semiconductor layer;

an emitter region constituted of a first conductivity region provided in said base region; and

a base contact section provided oppositely from said emitter region in said base region, electrically connected to a base electrode,

wherein said base contact section is constructed of a repeating structure in a plan view, in which a high impurity concentration region of the second conductivity type and a region of the first conductivity type are arranged in an alternate manner, and

wherein said emitter region comprises a plurality of stripe regions and each of said stripe regions is formed so that said base region is exposed at the central portion of each of said stripe regions to be segmented along a direction of the stripe into two segmented stripe regions, and an emitter electrode is formed so as to be connected to said stripe regions and to cover exposed portions of said base region via an insulating film on said segmented stripe regions and said base region therebetween.

4. (Amended) A semiconductor device with a bipolar

09926425-103001

transistor comprising:

a first conductivity type semiconductor layer serving as a collector region;

a base region constituted of a second conductivity type region provided in said first conductivity type semiconductor layer;

an emitter region constituted of a first conductivity region provided in said base region; and

a base contact section provided oppositely from said emitter region in said base region, electrically connected to a base electrode,

wherein said base contact section is constructed of a repeating structure in a plan view, in which a high impurity concentration region of the second conductivity type and a region of the second conductivity type constituting said base region are arranged in an alternate manner, and

wherein said emitter region comprises a plurality of stripe regions and each of said stripe regions is formed so that said base region is exposed at the central portion of each of said stripe regions to be segmented along a direction of the stripe into two segmented stripe regions, and an emitter electrode is formed so as to be connected to said stripe regions and to cover exposed portions of said base region via an insulating film on said segmented stripe regions and said base region therebetween.

5. (Amended) A semiconductor device according to

09926425 "103001

a/ claim 1, 2, 3 or 4, wherein an emitter electrode connected to said emitter region and a base electrode connected to said base contact section are formed in respective comb structures in which teeth of said emitter electrode and said base electrode are engaged with each other being alternately arranged.

---

6. (Deleted)

7. (Deleted)

8. (Deleted)

az 09026425 103001 100001 9. (Amended) A semiconductor device with a bipolar transistor comprising:

a first conductivity type semiconductor layer serving as a collector region;

a base region constituted of a second conductivity type region provided in said first conductivity type semiconductor layer;

an emitter region constituted of a first conductivity region provided in said base region; and

a base contact section provided oppositely from said emitter region in said base region, electrically connected to a base electrode,

wherein said emitter region comprises a plurality of stripe regions and each of said stripe regions is formed so that said base region is exposed at the central portion of each of said stripe regions to be segmented into a plurality along a direction of the stripe, and an emitter electrode is formed so as to be connected to said stripe

92 regions and to cover exposed portions of said base region.

10. (Deleted)

AS 11. (Amended) A semiconductor device with a bipolar transistor comprising:

a first conductivity type semiconductor layer serving as a collector region;

a base region constituted of a second conductivity type region provided in said first conductivity type semiconductor layer;

an emitter region constituted of a first conductivity region provided in said base region; and

a base contact section provided oppositely from said emitter region in said base region, electrically connected to a base electrode,

wherein said emitter region comprises a plurality of stripe regions and each of said stripe regions is formed so that said base region is exposed at the central portion of each of said stripe regions to be segmented along a direction of the stripe into two segmented stripe regions, and an emitter electrode is formed so as to be connected to said stripe regions and to cover exposed portions of said base region via an insulating film on said segmented stripe regions and said base region therebetween.

0906425-103001